

I Claim:

1. An apparatus for indicating a closure state of a key-operated lock, comprising:

a housing mounted to a key keyed to the lock;

a rotation direction sensor disposed in said housing and having:

a hollow body substantially completely filled with a first electrically conductive fluid and with a second electrically non-conductive fluid repelling the first fluid; and

electrically conductive contacts for production of electrical contact sequences in dependence on a position of the first fluid and the second fluid in said hollow body representing a closing direction;

an electronic evaluation unit connected to receive the electrical contact sequences to determine the closure state of the lock.

2. The apparatus according to claim 1, wherein the first fluid is a first liquid and the second fluid is a second liquid, and the first liquid has a lower density than the second liquid.

3. The apparatus according to claim 1, wherein said hollow body has a shaped of a prism with two base surfaces extending substantially parallel to one another and substantially perpendicular to a rotation axis of the key in the lock.

4. The apparatus according to claim 1, wherein said hollow body has a substantially cylindrical cross-sectional shape.

5. The apparatus according to claim 1, wherein said hollow body has a cross-sectional shape substantially composed of circular arc sections.

6. The apparatus according to claim 1, wherein said hollow body has a substantially kidney-shaped cross section.

7. The apparatus according to claim 1, which comprises an activation switch connected to said evaluation unit and disposed on said housing.

8. The apparatus according to claim 7, wherein an operation of said activation switch followed within a predetermined time period by a given contact sequence representing a locking process causes an activation of said evaluation unit and an output indication of a new closure state.

9. The apparatus according to claim 7, wherein said evaluation unit is configured to be switched, via said activation switch, between a clockwise-locking lock and a counterclockwise-locking lock.
10. The apparatus according to claim 1, which further comprises a timer connected to said evaluation unit or contained therein, for determining a last closing time.
11. The apparatus according to claim 1, which comprises a display disposed on said housing and connected to said evaluation unit, for displaying at least one of a closing time and the closure state of the lock.
12. The apparatus according to claim 1, which comprises an acoustic signal transmitter configured to produce an acoustic signal when an electrically conductive connection is formed between two adjacent said contacts of said rotation direction sensor.
13. The apparatus according to claim 1, which comprises a first visual indicator, for signaling a closed state of the lock, and a second visual indicator, for signaling an opened closure state of the lock.

14. The apparatus according to claim 1, which comprises at least one visual indicator for signaling a closed state of the lock and for signaling an opened closure state of the lock.

15. The apparatus according to claim 1, which comprises a power source for powering the apparatus.

16. The apparatus according to claim 15, wherein said power source is one of a battery, a rechargeable battery, and a solar cells.

17. The apparatus according to claim 1, wherein said evaluation unit comprises microchip circuit, and function and states of the circuit are programmable.

18. The apparatus according to claim 17, wherein said microchip circuit is a digital and/or analog circuit.